



Name Jau-Ye Shiu

Current Positions Assistant Professor, Graduate Institute of Biomedical Sciences, the College of Medicine, China Medical University

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Education

Doctorial Research, department of Materials Science and Engineering, National Taiwan Chiao-Tung University 2006-2009

Postdoctoral Research Fellow, Swiss Federal Institute of Technology (ETH) Zurich, Switzerland 2010-2015

Expertise

Mechanobiology

Cell biology

Cell-based biosensor

Cell-substrate interaction

Microfluidics

Micro/nano fabrication

Research Interests

My profession is interdisciplinary between biology and materials science. My PhD project studied the polymer base nanostructure for biological application, which includes the fabrication of micro/nano structure that embedded into microfluidic system for observing the behavior of single DNA molecules. During my postdoc, I have developed a force sensing platform to measure cell-generated forces, this platform not only increase the spatial resolution at which traction forces can be mapped, but enable new biological discoveries associated with this mechanotransduction process. In my current research, I develop advanced platform that measure cellular force in real-time, high-throughput and microscopy free, which support drug development in pharma.

Selected Grants:

1. YingTsai Young Scholar, China Medical University (2020-10-01 ~2025-10-31)
2. NCCR-Molecular Systems Engineering, Mechanical Systems Design of the Living Cell, Switzerland (2014~2018)

Selected Publications

1. **Shiu JY**, Aires L, Vogel V. Nanopillar force measurements reveal actin-cap-mediated YAP mechanotransduction, *Nature cell Biology*, 2018; 20:262-271
2. Garif Yalak, **Shiu JY**, Ingmar Schön, Maria Mitsi, Viola Vogel. Phosphorylated fibronectin enhances cell attachment and upregulates mechanical cell functions, *PLoSOne*, 2019, 14(7): e0218893

Selected Patents

1. Fast switching super-hydrophilic, super-hydrophobic surface. Patent date Issued 2006. Patent issuer and number TW I265945
2. Addressable microfluidic device. Patent date Issued 2005. Patent issuer and numbertw TW I296607